ABSTRACT OF THE DISCLOSURE

An apparatus and process is disclosed for the separation of solids from gases and a mixture which is most particularly applicable to an FCC apparatus. The mixture of solids and gases are passed through a conduit and exit through a swirl arm that imparts a swirl motion to centrifugally separate the heavier solids from the lighter gases. The mixture then enters a cyclone through an inlet that has a long, straight sidewall that gradually transitions with a curved outer wall that defines a cyclone barrel and a short, straight sidewall that abruptly transitions with the curved outer wall. The short, straight sidewall is substantially tangentially disposed with respect to a gas recovery conduit which transports a mixture of solids and gases from a reactor conduit. This arrangement provides greater clearance between cyclones and a reactor vessel.